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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,317	07/13/2001	Yasuhisa Tsujita	09253-003001	6175
26161	7590	01/12/2005	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			PREVIL, DANIEL	
			ART UNIT	PAPER NUMBER
			2636	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/905,317

Applicant(s)

TSUJITA ET AL.

Examiner

Daniel Previl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/17/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to communication filed on September 10, 2004.

Specification

1. The disclosure is objected to because of the following informalities: page 4, line 22, delete "3" and substitute it by ---10--- and delete "1" in line 35 and substitute it by ---10---; page 6, line 9, delete "indictor" and substitute it by ---indicator---; page 6, line 15 and line 16 delete "alarm device 20" and substitute it by ---alarm device 24---. Appropriate correction is required.

Claim Objections

2. Claims 1-8 are objected to because of the following informalities: Claim 1, line 3, delete "the" and substitute it by ---a---; claim 9, line 4, delete "the temperature" and substitute by ---a temperature---. Appropriate correction is required.

Claims 2-8, 10-14 are objected for the same reason since they depend from objected claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bowler et al. (US 5,335,540).

Regarding claim 1, Bowler discloses a tire condition monitoring apparatus for monitoring a condition of a tire attached to a vehicle (col. 6, lines 49-64) comprising: a transmitter operated by a battery (transmitter 86 provided by a 9 volt battery) (col. 8, lines 26-28) and detects at least the temperature in the tire (temperature conditions of the tire) (col. 8, lines 27-55) and a voltage-related value that varies in accordance with voltage of the battery, wherein the battery has a life (fig. 5; col. 9, lines 5-15); a controller 114 (fig. 5) which judges whether or not the life of the battery is ending depending on the voltage related value (col. 17, lines 13-18) wherein the judgment regarding the life of the battery is preformed in accordance with a comparison of the voltage related value with a reference value that is based at least in part on the temperature in the tire (Ram includes big temperature change flag register 411 to determine whether or not the rate of change of temperature is greater than a pre-defined value) (fig. 5; col. 17, lines 13-27 and lines 31-55).

Regarding claim 2, Bowler discloses the transmitter wirelessly (remotely) (col. 6, lines 23-25) transmits data, which includes data represents the temperature in the tire and data that represents the voltage related value (abstract; col. 6, lines 23-45; col. 8, lines 26-29) and the controller (second controller) (fig. 20) is located in a receiver 600 (fig. 20) that receives the data from the transmitter (fig. 20; col. 23, lines 35-50; col. 32, lines 4-12).

Regarding claim 3, Bowler discloses the controller 114 (fig. 5) judges whether or not the life of the battery is ending (battery voltage below an

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acceptable limit or within an acceptable limit) (col. 17, lines 13-18) based on a comparison between the voltage related value and a variable voltage reference value that is selected with the temperature in the tire (col. 17, lines 14-27).

Regarding claim 4, Bowler discloses the controller determines the voltage reference value using a functional equation that represents variation of the voltage of the battery with respect to the ambient temperature to which the battery is exposed (col. 16, lines 45-56; col. 17, lines 13-27 and lines 36-44).

Regarding claim 5, Bowler discloses the controller judges whether or not the life of the battery is ending based on a comparison between the voltage related value and a predetermined constant voltage reference value if the temperature in the tire is greater than a predetermined reference value (col. 17, lines 13-27) and the controller does not perform the judgment regarding the life of the battery if the temperature in the tire is smaller than the reference value (col. 17, lines 13-18 and lines 47-55).

Regarding claim 6, Bowler discloses the controller determines that the life of the battery is ending if the voltage-related value has been repeatedly judged to be smaller than the voltage reference value in consecutive judgment cycles (big temperature change flag register is for storing a flag bit indicative of whether or not the rate of change of temperature is greater than a pre-defined value) (col. 17, lines 23-27). According to the Applicant's disclosure on page 9 "if the counter number x is equal to or greater than a predetermined number, it is indicated that the voltage has been

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repeatedly judged to be smaller than the voltage reference in consecutive judgment cycles) (page 9, lines 3-9).

Regarding claim 7, Bowler discloses the controller determines that the life of the battery is ending if the voltage-related value has been repeatedly judged to be smaller than the voltage reference value in consecutive judgment cycles (big temperature change flag register is for storing a flag bit indicative of whether or not the rate of change of temperature is greater than a pre-defined value) (col. 17, lines 23-27). According to the Applicant's disclosure on page 9 "if the counter number x is equal to or greater than a predetermined number, it is indicated that the voltage has been repeatedly judged to be smaller than the voltage reference in consecutive judgment cycles) (page 9, lines 3-9).

Regarding claim 8, Bowler discloses the voltage-related value is the voltage of the battery (col. 17, line 16).

Regarding claim 9, Bowler discloses a tire condition monitoring apparatus for monitoring a condition of a tire attached to a vehicle (col. 6, lines 49-64) comprising: a transmitter operated by a battery (transmitter 86 provided by a 9 volt battery) (col. 8, lines 26-28) and wirelessly transmits data (remotely transmit to a central location) (col. 6, lines 23-37) wherein the data includes at least data that represents the temperature in the tire (temperature conditions of the tire) (col. 8, line 29) and data that represents voltage of the battery, wherein the battery has a life (fig. 5; col. 9, lines 5-15); and a receiver (42 or 600) (fig. 1; fig. 20; col. 23, lines 35-47), which receives the data from the transmitter (col. 21, lines 43-46), wherein the receiver includes a controller 114 (fig.

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5, fig. 20; col. 25, lines 27-30) which judges whether or not the life of the battery is ending depending on the voltage of the battery (Ram includes one bit battery condition, battery voltage) (col. 17, lines 13-18), which is derived from the received data (fig. 1; fig. 20) wherein the judgment regarding the life of the battery is preformed in accordance with a comparison of the voltage of the battery with a reference value that is based at least in part on the temperature in the tire (Ram includes big temperature change flag register 411 to determine whether or not the rate of change of temperature is greater than a pre-defined value) (fig. 5; col. 17, lines 14-27 and lines 31-55), which is derived from the received data (fig. 1, fig. 20).

Regarding claim 10, Bowler discloses the controller (ram 160) (fig. 4) judges whether or not the life of the battery is ending (battery voltage below an acceptable limit or within an acceptable limit) (col. 17, lines 13-18) based on a comparison between the voltage of the battery and a variable voltage reference value that is selected with the temperature in the tire (col. 17, lines 14-27).

Regarding claim 11, Bowler discloses the controller determines the voltage reference value using a functional equation that represents variation of the voltage of the battery with respect to the ambient temperature to which the battery is exposed (col. 16, lines 45-56; col. 17, lines 14-27 and lines 36-44).

Regarding claim 12, Bowler discloses the controller judges whether or not the life of the battery is ending based on a comparison between the voltage of the battery and a predetermined constant voltage reference value if the temperature in the tire is greater than a predetermined reference value (col. 17, lines 14-27) and the

controller does not perform the judgment regarding the life of the battery if the temperature in the tire is smaller than the reference value (col. 17, lines 13-18 and lines 47-55).

Regarding claim 13, Bowler discloses the controller determines that the life of the battery is ending if the voltage of the battery has been repeatedly judged to be smaller than the voltage reference value in consecutive judgment cycles (big temperature change flag register is for storing a flag bit indicative of whether or not the rate of change of temperature is greater than a pre-defined value) (col. 17, lines 23-27). According to the Applicant's disclosure on page 9 "if the counter number x is equal to or greater than a predetermined number, it is indicated that the voltage has been repeatedly judged to be smaller than the voltage reference in consecutive judgment cycles) (page 9, lines 3-9).

Regarding claim 14, Bowler discloses the controller determines that the life of the battery is ending if the voltage of the battery has been repeatedly judged to be smaller than the voltage reference value in consecutive judgment cycles (big temperature change flag register is for storing a flag bit indicative of whether or not the rate of change of temperature is greater than a pre-defined value) (col. 17, lines 23-27). According to the Applicant's disclosure on page 9 "if the counter number x is equal to or greater than a predetermined number, it is indicated that the voltage has been repeatedly judged to be smaller than the voltage reference in consecutive judgment cycles) (page 9, lines 3-9).

Regarding claim 15, Bowler discloses a tire condition monitoring apparatus for monitoring a condition of a tire attached to a vehicle (col. 6, lines 49-64) comprising: a temperature sensor, which detects the temperature in the tire (col. 8, lines 53-55); a voltage sensor, which detects the voltage of the battery (fig. 5, ref. 106; col. 9, lines 5-16); a transmitting circuit (fig. 1) which wirelessly transmits data (remotely transmit to a central location) (col. 6, lines 23-37) including data that represents the detected temperature in the tire (temperature conditions of the tire) (col. 8, lines 27-55) and data that represents the detected voltage, (fig. 5; col. 9, lines 5-15); and a receiver (42 or 600) (fig. 1; fig. 20; col. 23, lines 35-47), which receives the data from the transmitter (col. 21, lines 43-46), wherein the receiver includes a controller 114 (fig. 5, fig. 20; col. 25, lines 27-30) that judges whether or not the life of the battery is ending depending on the voltage of the battery (Ram includes one bit battery condition, battery voltage) (col. 17, lines 13-18), which is derived from the received data (fig. 1; fig. 20) and a variable voltage reference value that is selected in accordance with the temperature in the tire (Ram includes big temperature change flag register 411 to determine whether or not the rate of change of temperature is greater than a pre-defined value) (fig. 5; col. 17, lines 13-27 and lines 31-55), which is derived from the received data (fig. 1, fig. 20).

Response to Arguments

5. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pashayan, Jr. (US 6,252,498) discloses a tire pressure detecting system for a vehicle.

Eberwine et al. (US 5,783,992) discloses a time based low tire pressure warning sensor.

Dezorzi (US 6,232,875) discloses an apparatus and method for controlling a tire condition module of a vehicle tire.

Koch et al. (US 5,573,611) discloses a method of monitoring conditions of vehicle tires and tires containing a monitoring device therein.

Lin (US 6,340,930) discloses a system and method for monitoring a condition of a vehicle tire.


Kessler et al. (US 6,445,286) discloses a method for operating a device for the monitoring and wireless signaling of a pressure change in pneumatic tires of a vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is (571) 272-2971. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel Previ
Examiner
Art Unit 2636

DP
January 10, 2005